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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,517	04/16/2004	Steven Bailey	MS307681.01 / MSFTP622US	1944
27195 7590 09/20/2007 AMIN. TUROCY & CALVIN, LLP 24TH FLOOR, NATIONAL CITY CENTER 1900 EAST NINTH STREET CLEVELAND, OH 44114			EXAMINER EHICHIOYA, FRED I	
			ART UNIT	PAPER NUMBER
			2162	
			NOTIFICATION DATE	DELIVERY MODE
			09/20/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/826,517

Applicant(s)

BAILEY ET AL.

Examiner

Fred I. Ehichioya

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 18, 20 - 24, and 26 - 30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 18, 20 - 24, and 26 - 30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 9, 2007 has been entered.

2. Claims 1 – 18, 20 – 24 and 26 - 30 are pending in this Office Action.

3. Claims 19, 25 are cancelled and claim 31 is withdrawn.

Response to Arguments

4. Applicant's argument regarding claims 12 - 18 and 21 - 24 rejected under 35 USC § 101 is persuasive; therefore, rejection of claims 12 - 18 and 21 - 24 under 35 USC § 101 is hereby withdrawn.

5. Applicant argues:

(a) Chen is silent regarding a lock manager that acquires a parent lock and one or more child locks on resource(s) of database (page 7, paragraph 2).

Examiner respectfully disagrees with the applicant. Joshi discloses a lock manager (see column 9, line 1) that acquires a parent lock and one or more child locks

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(see column 10, lines 29 – 34) on resource(s) of database (see column 16, lines 17 - 18).

(b) Chen et al. is silent regarding count of the one or more child locks within the parent lock such that the parent lock is released upon release of all child locks associated therewith (page 8, paragraph 1)

Examiner respectfully disagrees with the applicant. Joshi discloses the lock manager stores a reference count of the one or more child locks within the parent lock as shown in column 15, lines 38 – 39 and Bray et al., discloses the parent lock is released upon release of all child locks associated therewith (see column 8, line 64 – column 9, line 4).

(c) Detlefs et al. fails to teach or suggest a lock manager that acquires a parent lock and one or more child locks on resource of database (pages 8, section III, paragraph 2 – page 9, line 1).

Examiner respectfully disagrees with the applicant. Please see response to argument (a) that is applicable herewith.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1 – 11 and 26 - 30 are rejected under 35 U.S.C. 101 because:

Claims 1 and 26 are directed to a “system for managing the access of system resources in a database”; this is software per se. Applicant discloses on page 7, lines 10 – 11 that “system is either hardware, a combination of hardware and software, software, or software in execution”. Claims 1 and 26 are neither hardware nor a combination of hardware and software; therefore claims 1 and 26 are non-statutory (MPEP 2106.01 [R-5] (I)).

Regarding claims 2 – 11 and 27 - 30, they depend from claim 1 and claim 26 respectively, recite computing steps, merely descriptive and lack the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101 and therefore non-statutory.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 5 – 9, 11 – 14, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,414,839 issued to Ashok M. Joshi (hereinafter "Joshi") in view of U.S. Patent No. 6,529,905 issued to Bray et al., (Hereinafter "Bray").

Regarding claim 1, Joshi teaches a computer implemented system for managing the access of system resources in a database comprising:

a lock manager (see column 9, line 1) that acquires a parent lock and one or more child locks (see column 10, lines 29 – 34: "ancestor is a parent while descendants are children") on resource(s) of a database (see column 16, lines 17 – 18), the lock manager stores a reference count of the one or more child locks within the parent lock such that(see column 15, lines 38 – 39).

Joshi does not explicitly teach the parent lock is released upon release of all child locks associated therewith.

Bray discloses the parent lock is released upon release of all child locks associated therewith (see column 8, line 65 – column 9, line 4).

It would have been obvious to one of ordinary skill in the art at the time of present invention to combine the cited references because Bray's teaching of the parent lock is released upon release of all child locks associated therewith would have allowed Joshi's system to enable other users to modify and/or edit nodes above the target node and in other branches of the document structure.

Regarding claim 5, Joshi teaches the system of claim 1 further comprises a lock hierarchy designated by the lock manager (see column 9, lines 65 - 68).

Regarding claim 6, Bray teaches the system of claim 5, the lock hierarchy comprises at least one of a database lock, page lock, table lock and row lock (see column 4, lines 39 - 42).

Regarding claim 7, Joshi teaches the system of claim 5 further comprising a page scan optimization that maintains a last child lock until a next one is acquired (column 18, lines 42 - 49).

Regarding claim 8, Joshi teaches the system of claim 1, the parent lock is an intent lock that protects resource at lower level (column 13, lines 31 - 40).

Regarding claim 9, Bray teaches the system of claim 5, the child lock is at least one of an exclusive, update and shared lock at a level of the hierarchy (column 2, lines 13 - 14).

Regarding claim 11, Joshi teaches the system of claim 1 further comprises a pointer that can guide a release operation from each child lock to a respective parent lock (column 10, lines 63 – 68).

Regarding claim 12, Joshi teaches a computer implemented for controlling locks to manage access to system resources in a database comprising:

defining a parent-child relationship among a plurality of locks in a lock hierarchy (see column 10, lines 63 – 65);

reference counting one or more child locks associated with parent lock, such that a parent lock maintains a count reference of respective child locks associated therewith (see column 15, lines 34 – 39).

Joshi does not explicitly teach releasing a parent lock upon a release of all the respective child locks associated therewith.

Bray discloses releasing a parent lock upon a release of all the respective child locks associated therewith (see column 8, line 65 – column 9, line 4).

It would have been obvious to one of ordinary skill in the art at the time of present invention to combine the cited references because Bray's teaching of a parent lock upon a release of all the respective child locks associated therewith would have allowed

Joshi's system to enable other users to modify and/or edit nodes above the target node and in other branches of the document structure.

Regarding claim 13, Joshi teaches the method of claim 12 the defining act further comprising arranging a top-down lock granularity based on logical or physical granularities of objects stored in the database (see column 10, lines 35 - 37).

Regarding claim 14, Joshi teaches the method of claim 12 further comprising pointing to a parent lock upon releasing a respective child lock associated therewith (see column 14, lines 1 - 5).

Regarding claim 16, Bray teaches the method of claim 12 further comprising acquiring an intent lock (column 2, lines 2 - 3) at least in one of a table level, page level and database level (see column 4, lines 39 - 42).

Regarding claim 17, Joshi teaches the method of claim 12 further comprising scoping the reference counting of a lock to a transaction (see column 15, lines 34 - 39).

9. Claims 2, 3, 4, 10, 15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Joshi in view of Bray and further in view of Chan et al., "Chan" (U.S. Patent No. 6,108,654).

Regarding claim 2, Joshi and Bray disclose the claimed subject matter as discussed in claim 1. Joshi or Bray does not explicitly teach zero value as claimed.

However, Chan discloses the parent lock is released upon the reference count attainment of a zero value (Though Chan does not explicitly state zero reference count, however Chan in column 11, lines 58 – 59 discloses that locks are allocated to nodes and column 12, lines 63 – 64 states that reference counts are decremented when nodes are detached; therefore, when node 2 and node 3 of Fig. 1 are detached, the reference count becomes zero and the lock on node 1 (parent node) of Fig.1 is consequently released).

It would have been obvious to one of ordinary skill in the art at the time of present invention to combine the cited references because Chan's teaching of decrementing "reference count" would have allowed Joshi and Bray's system to release all lock manager instances and this will enable users to modify and/or edit nodes.

Regarding claim 3, Joshi disclose a lock monitoring system that monitors the reference count of child locks associated with the parent lock (see column 12, lines 34 – 36).

Regarding claim 4, Chan teaches the database management system of claim 1, as each child lock is released the reference count of the parent lock decrements by a values of one (col. 12, lines 43-44).

Regarding claim 10, Chan teaches the database management system of claim 1, the reference count is performed upon completion of a least one of a scan, query or operation (col. 12, lines 36-38).

Regarding claim 15, Joshi teaches the method of claim 12 further comprising reference counting child locks directly associated with the parent lock (see column 15, lines 34 - 39).

Regarding claim 18, Chan teaches scoping the reference counting of a lock to a transaction (column 12, lines 34 - 35).

10. Claims 20 - 24, and 26 - 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Joshi in view of Bray and further in view of Chan et al., "Chan" (U.S. Patent No. 6,108,654).

Regarding claim 20, Joshi discloses a computer implemented database management system comprising:

Locking means for locking a resource on a database (see column 10, lines 29 – 34);

Means for counting one or more child locks associated with the locking means (see column 15, lines 38 – 39); and

Joshi does not explicitly disclose determining a lifetime of the locking means as claimed.

Chan discloses means for determining a lifetime of the locking means (see column 6, lines 15 – 18) base on the number of child locks associated therewith (see column 6, lines 8 – 12; “nodes are interpreted as children having locks”).

It would have been obvious to one of ordinary skill in the art at the time of present invention to combine the cited references because Chan’s teaching of determining the time to hold a lock would have allowed the lock manager of Joshi’s system to maintains a set of resource names and provides operations for allowing multiple processes to synchronize the concurrent access of named resources.

Regarding claim 21, Joshi teaches a computer implemented method for controlling locks to manage access to system resources in a database comprising:

counting one or more child locks associated with a parent lock to obtain a reference count of the child locks associated therewith(see column 15, lines 38 – 39);

releasing a child lock (see column 4, line 57 “leaf node” is the “child node”).

Joshi does not explicitly disclose decrementing the reference count as claimed.

However, Chan discloses decrementing the reference count by a value of one (col. 12, lines 43 - 44).

It would have been obvious to one of ordinary skill in the art at the time of present invention to combine the cited references because Chan's teaching of decrementing "reference count" would have allowed Joshi's system to release all lock manager instances and this will enable users to modify and/or edit nodes.

Regarding claim 22, Chan discloses releasing the parent lock upon the reference count reaching a zero value (Though Chan does not explicitly state zero reference count, however Chan in column 11, lines 58 – 59 discloses that locks are allocated to nodes and column 12, lines 63 – 64 states that reference counts are decremented when nodes are detached; therefore, when node 2 and node 3 of Fig. 1 are detached, the reference count becomes zero and the lock on node 1 (parent node) of Fig.1 is consequently released.).

Regarding claim 23, Joshi disclose monitoring the reference count (see column 12, lines 34 – 36).

Regarding claim 24, Joshi discloses identifying the parent lock via a pointer (see column 10, lines 63 – 65).

Regarding claim 26, Joshi teaches a computer implemented database lock management system for managing access to system resources comprising:

a computer executable lock manager (see column 9, line 1) that acquires at least a parent lock and one or more child locks (see column 10, lines 29 - 34) on a database resource (see column 16, lines 17 - 18), the lock manager creates within the parent lock a reference count of the child lock (see column 15, lines 38 - 39).

Joshi does not explicitly teach zero count as claimed.

However, Chan discloses so that the lock manager releases the parent lock upon the reference count attainment of a zero count (Though Chan does not explicitly state zero reference count, however Chan in column 11, lines 58 - 59 discloses that locks are allocated to nodes and column 12, lines 63 - 64 states that reference counts are decremented when nodes are detached; therefore, when node 2 and node 3 of Fig. 1 are detached, the reference count becomes zero and the lock on node 1 (parent node) of Fig.1 is consequently released.).

It would have been obvious to one of ordinary skill in the art at the time of present invention to combine the cited references because Chan's teaching of decrementing "reference count" would have allowed Joshi's system to release all lock manager instances and this will enable users to modify and/or edit nodes.

Regarding claim 27, Joshi discloses the computer readable medium of claim 26 further comprising a further computer executable component that monitors the reference count (see column 12, lines 34 - 36).

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Regarding claim 28, Joshi teaches forwarding pointer device that identifies a parent lock associated with a released child lock (see column 10, lines 63 – 65).

Regarding claim 29, Chan discloses a probabilistic classification model (see column 10, lines 62 - 67).

Regarding claim 30, Joshi discloses the reference count is the count of direct child locks associated with the parent lock (see column 15, lines 34 - 39).

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred I. Ehichioya whose telephone number is 571-272-4034. The examiner can normally be reached on M - F 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene can be reached on 571-272-4107. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Fred I. Ehichioya/

September 10, 2007


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